

REMARKS/ARGUMENTS

In the final Office Action mailed March 8, 2005, claim 109 was rejected under 35 U.S.C. § 102(b) over US Patent No. 5,593,130 to *Hansson*. This rejection is respectfully traversed in view of the amendment and remarks that follow.

The amendment to claim 109 recites that the first microfabricated recess that forms a flow channel for a fluid moving through the elastomeric structure is adapted to direct a flow of fluid and that the membrane portion is integral with the first elastomeric layer, *i.e.*, integral with the elastomeric layer that has the first microfabricated recess. The membrane portion is deflectable into the first microfabricated recess in response to an actuation force applied with the second microfabricated recess. Support for the amendment can be found, for example, in Fig. 7H of the Application and in the accompanying description in the specification on page 25, lines 6–12, that shows membrane 25 integral with layer 24, which also has flow channel 30, and describes actuation of the membrane portion. This is supplemented by the disclosure in Figs. 7C–7G showing steps in providing the elastomeric block for an embodiment, as explained at page 12, line 28, through page 13, line 30.

In contrast, Fig. 3 of *Hansson* shows a fluid-handling block with fluid flow channel 11 formed in elastomeric layer 2, while an actuatable membrane 7 is formed in a separate elastomeric layer 3. There is no description or suggestion that fluid flow channel 11 be integrated in a single layer with the elastomeric layer 3 such that the flow channel 11 and actuatable membrane 7 are part of the same elastomeric layer. In fact, such an integration of the channel 11 with actuatable membrane 7 would compromise the functioning of the two-tiered valve seat 6, which is the focal point of the invention in *Hansson*.

Fluid flow through channel 11 is controlled by contact between membrane 7 and surface area 10 on the valve seat 6. The two-tier design of the valve seat 6 allows surface area 10 to be small (5% of the membrane area), thereby allowing quick blocking of the liquid flow through channel 11, at low overpressure of membrane 7 (*see id.*, column 3, lines 7–32). If the flow channel were integrated into membrane 7, then the valve seat 6 would no longer directly

contact channel 11, slowing the ability of the valve seat 6 to block liquid flow through the channel. Thus, integrating flow channel 11 with actuatable membrane 7 would defeat the purpose of the two-tier valve seat 6 at the heart of the invention in *Hansson*.

Hansson fails to describe every element recited in claim 109, as amended. For at least this reason, claim 109 is allowable over the reference, and withdrawal of the rejection is respectfully requested.

CONCLUSION

In view of the foregoing, Applicants believe claim 109 is in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,



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